

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



OFFICE OF CHEMICAL SAFETY AND  
POLLUTION PREVENTION

**MEMORANDUM**

**Date:** 05/15/2020

**SUBJECT: Prothioconazole:** Acute and Chronic Aggregate Dietary Exposure and Risk Assessments for Establishing Harmonized Tolerances for Sugar Beet Roots; Soybean Seed; Pea and Bean, Dried Shelled, Except Soybean (Subgroup 6C) and Bushberry (Subgroup 13-07B) in Conjunction with Registration Review.

**PC Codes:** 113961

**Decision No.:** 554563

**Petition No.:** NA

**Risk Assessment Type:** Dietary Exposure

**TXR No.:** NA

**MRID No.:** NA

**DP Barcode:** D455826

**EPA Reg. No.:** 264-825

**Regulatory Action:** Registration Review

**Case No.:** NA

**CAS No.:** 178928-70-6

**40 CFR:** §180.626

**FROM:** William D. Wassell, Chemist  
Risk Assessment Branch 3 (RAB3)  
Health Effects Division (HED; 7509P)

Handwritten signature of William D. Wassell.

**THROUGH:** Thurston G. Morton, Chemist  
Pete Savoia, Chemist  
Dietary Exposure Science Advisory Council (DESAC)  
and  
Thomas Moriarty, Branch Chief  
RAB3/HED (7509P)

Handwritten signatures of Thurston G. Morton and Pete Savoia.

Handwritten signature of Thomas Moriarty.

**TO:** Tiffany Green, Chemical Review Manager  
Kevin Costello, Branch Chief  
Pesticide Re-evaluation Division (7508P)

## Executive Summary

Prothioconazole (2-[2-(1-chlorocyclopropyl)-3-(2-chlorophenyl)-2-hydroxypropyl]-1,2-dihydro-3H-1,2,4-triazole-3-thione) is a systemic demethylation inhibitor fungicide which belongs to the triazolinthione class of fungicides (Group 3). Prothioconazole is used for the control of ascomycetes, basidiomycetes and deuteromycetes diseases in agricultural crops.

Acute and chronic aggregate dietary (food and drinking water) exposure and risk assessments were conducted using the Dietary Exposure Evaluation Model software with the Food Commodity Intake Database (DEEM-FCID) Version 3.16, which uses 2003 – 2008 food consumption data from the U.S. Department of Agriculture's (USDA's) National Health and Nutrition Examination Survey, What We Eat in America, (NHANES/WWEIA). The analyses were conducted in support of a draft human health risk assessment for registration review. As a result of registration review, RAB3 has proposed that tolerances for residues in/on pea & bean, dried shelled, except soybean (subgroup 6C) should be altered from 0.9 ppm to 1.0 ppm, soybean, seed from 0.15 ppm to 0.2 ppm, sugar beet roots from 0.25 ppm to 0.3 ppm, and bushberry (subgroup 13-07B) from 2.0 ppm to 1.5 ppm. These tolerance levels are being altered in order to harmonize with Codex Maximum Residue Limits (MRLs).

This memorandum was reviewed by two peer reviewers of the DESAC, per DESAC SOP 2012.1.

## Acute Dietary Exposure Assessment

Partially refined acute and chronic dietary exposure assessments were conducted for prothioconazole. HED-recommended tolerance values were used for pea & bean, dried shelled, except soybean (subgroup 6C, 1.0 ppm), soybean seed (0.2 ppm), sugar beet roots (0.3 ppm), and bushberry (subgroup 13-07B, 1.5 ppm). Existing tolerances on sunflower, berries, cucurbit vegetables, sweet corn, kernel plus cob with husks removed (K + CWHR), and cottonseed were utilized; average field trial residues (all other food forms were blended), empirical processing factors (where available/appropriate), and 100 percent crop treated (%CT) were assumed for the acute and chronic dietary assessments.

Dietary risk estimates were determined considering exposures from food plus drinking water using upper bound estimated drinking water concentrations (EDWCs) for ground water sources for nursery seedlings provided by the Environmental Fate and Effects Division (EFED).

No changes in the previously determined acute endpoint was identified. The endpoint applies only to females of child bearing ages. Therefore, females 13-49 years of age was the only population subgroup included in the acute assessment.

The acute dietary (food and drinking water) exposure estimates for all the scenarios are below HED's level of concern (<100 % of the acute population-adjusted dose (aPAD)) females 13-49 yrs. old. The exposure for food plus drinking water estimates utilized 41% of the aPAD for females 13-49 yrs. old at the 95<sup>th</sup> percentile.

## Chronic Dietary Exposure Assessment

The chronic dietary (food and drinking water) exposure estimates for all the scenarios are below HED's level of concern (<100% of the chronic population-adjusted dose (cPAD)) for the U.S. population and all population subgroups. The exposure and risk estimates for food plus drinking water are 34% of the cPAD for the U.S. population and 80% for all infants (<1 year), the most highly exposed population subgroup.

## Cancer Dietary Exposure Assessment

A cancer dietary assessment was not conducted since prothioconazole was classified as "not likely to be carcinogenic to humans."

## I. Introduction

Dietary risk assessment incorporates both exposure and toxicity of a given pesticide. For acute and chronic assessments, the risk is expressed as a percentage of a maximum acceptable dose (i.e., the dose that HED has concluded will result in no unreasonable adverse health effects). This dose is referred to as the population-adjusted dose (PAD). The PAD is equivalent to the point of departure (POD, NOAEL, LOAEL, e.g.) divided by the required uncertainty or safety factors. For acute and non-cancer chronic exposures, HED is concerned when estimated dietary risk exceeds 100% of the PAD. References that discuss the acute and chronic risk assessments in more detail are available on the EPA/pesticides web site: "Available Information on Assessing Exposure from Pesticides, A User's Guide," 21-JUN-2000, web link: <http://www.epa.gov/fedrgstr/EPA-PEST/2000/July/Day-12/6061.pdf>; or see SOP 99.6 (20-AUG-1999).

The most recent dietary risk assessment for prothioconazole was conducted by J. Smith (D437473, 01/09/2017).

## II. Residue Information

*Residues of Concern:* The residues of concern for tolerance enforcement and for risk assessment in primary and rotational crop commodities are defined as the sum of prothioconazole and its metabolite desthio-prothioconazole, calculated as prothioconazole (D303508, S. Funk, 08/21/2006).

The residues of concern in livestock commodities for tolerance enforcement are defined as the sum of prothioconazole, desthio-prothioconazole, and conjugates that are converted to prothioconazole or desthio-prothioconazole via acid hydrolysis, calculated as prothioconazole (D303508, S. Funk, 08/21/2006).

The residues of concern for risk assessment in livestock commodities are defined as the sum of prothioconazole, desthio-prothioconazole, 4-hydroxy prothioconazole, and conjugates that are converted to prothioconazole or desthio-prothioconazole or 4-hydroxy prothioconazole via acid hydrolysis, calculated as prothioconazole (D303508, S. Funk, 08/21/2006).

*Tolerances:* Prothioconazole tolerances are currently established under 40 CFR §180.626.

Tolerances for plant commodities are listed in 40 CFR §180.626(a)(1). Current tolerances range from 0.02 ppm in/on alfalfa to 17 ppm in/on soybean, hay.

Tolerances for livestock commodities are listed in 40 CFR §180.626(a)(2). Tolerances have been established at 0.02 ppm for milk; 0.02, 0.1, and 0.2 ppm, respectively, for the meat, fat, and meat byproducts of cattle, goat, horse, and sheep; 0.05 ppm for the meat byproducts of hog, and 0.02 ppm for poultry liver.

*Residue Data used for the Acute and Chronic Assessments:*

The USDA Pesticide Data Program (PDP) monitored pesticide residues in catfish in 2008, 2009, and 2010 and salmon in 2013 and 2014. Over this 5-year period, PDP analyzed 1479 samples of catfish for prothioconazole residues and 706 samples of salmon. None of the samples contained detectable residues (limit of detection (LOD) about 0.001 ppm for catfish or 0.002 ppm for salmon). As a result, residues in fish were not included in the assessment.

### **III. Percent Crop Treated Information**

For both the acute and chronic assessments, 100% crop treated (CT) values were used.

### **IV. Drinking Water Data**

The drinking water residues used in the dietary risk assessment were provided by EFED in the following memorandum “*Revised Drinking Water Assessment in Support of the Proposed Prothioconazole New Use for the Crop Group Expansion from Canola/Rapeseed to Crop Subgroup 20A*” (D446765, C. Sutton, 04/25/2018) and incorporated directly into this dietary assessment. Water residues were incorporated in the DEEM-FCID into the food categories “water, direct, all sources” and “water, indirect, all sources.”

The resulting Drinking Water Assessment (DWA; dated 12/21/2017; D442866) finalized at that time indicated that new modeling was not conducted, and that EFED was relying on the most recent drinking water assessment conducted in February 2016 (D431476, C. Sutton, 02/18/2016) for the recommended Estimated Drinking Water Concentrations (EDWC) to be used for human health dietary risk assessment. However, it has since been noted that the DWA from February 2016 was not the most recent one, as it had been revised in April of 2016, so that the most recent assessment is the one dated April 13, 2016 (D432619, C. Sutton, 04/13/2016). This memo serves to correct the information to reflect the most recent DWA from April 2016 (attached).

The maximum single application rate for canola, now proposed for Crop Subgroup 20A, is 0.178 lb ai/A, with a maximum annual application rate of 0.356 lb ai/A/yr. The pesticide may be applied to canola up to twice a year, with a minimum reapplication interval of 14 days, using aerial spray, ground spray or chemigation. The proposed maximum single application rate for flax seed is 0.14 lb ai/A, with a maximum annual application rate of 0.28 lb ai/A/yr.

The pesticide may be applied to flax seed up to twice a year, with a minimum reapplication interval of 10 days, using aerial spray, ground spray or chemigation.

Because the maximum single and annual application rates for canola and flax seed are not higher than the respective application rates for other uses assessed in previous Drinking Water Assessments (DWA; USEPA 2010; USEPA 2012a; USEPA 2012b, USEPA 2016; see attached DWA), new modeling was not conducted for this action, and EFED is relying on the most recent drinking water assessment conducted in April 2016 (D432619, C. Sutton, 04/13/2016; attached) for the recommended Estimated Drinking Water Concentrations (EDWC) to be used for human health dietary risk assessment. In the April 2016 assessment, the acute and chronic EDWCs based on nursery seedlings use and determined using the model PRZM-GW are **132 ppb** and **128 ppb**, respectively. These values were estimated for groundwater based on the nursery seedlings use at an application rate of 0.156 lb ai/A with 5 applications/yr at 14-day intervals.

Table 1. Maximum Estimated Drinking Water Concentrations for prothioconazole residues of concern in surface water and groundwater based on 30 years of continuous use.				
Drinking Water Source (Model Used)	Use (Rate Modeled)	Maximum Estimated Drinking Water Concentration (EDWC)		
		Acute (µg/L)	Chronic (µg/L)	Cancer (µg/L)
Surface water (PRZM/EXAMS; IL corn scenario)	Corn 0.178 lb ai/A x 4 application/yr at 7-day intervals using aerial spray	108.8	96.8	77.9
Groundwater (PRZM-GW)	Nursery seedlings 0.156 lb ai/A x 5 applications/yr at 14-day intervals	<b>132<sup>1</sup></b>	<b>128<sup>1</sup></b>	<b>128<sup>1</sup></b>

<sup>1</sup> Bolded values indicate the EDWCs recommended for use in HED's dietary risk assessment.

## V. DEEM-FCID Program and Consumption Information

Prothioconazole acute and chronic dietary exposure assessments were conducted using the Dietary Exposure Evaluation Model software with the Food Commodity Intake Database DEEM-FCID, Version 3.16, which incorporates 2003 – 2008 consumption data from USDA's NHANES/WWEIA. The data are based on the reported consumption of more than 20,000 individuals over two non-consecutive survey days. Foods "as consumed" (e.g., apple pie) are linked to EPA-defined food commodities (e.g., apples, peeled fruit - cooked; fresh or N/S; wheat flour - cooked; fresh or N/S, baked) using publicly available recipe translation files developed jointly by USDA Agriculture Research Service (ARS) and EPA. For chronic exposure assessment, consumption data are averaged for the entire U.S. population and within population subgroups. However, for acute exposure assessment, consumption data are retained as individual consumption events. Based on analysis of the 2003-2008 WWEIA consumption data, which took into account dietary patterns and survey respondents, HED concluded that it is most appropriate to report risk for the following population subgroups: the general U.S. population, all infants (<1 year old), children 1-2, children 3-5, children 6-12, youth 13-19, adults 20-49, females 13-49, and adults 50 - 99 years old.

For a chronic dietary exposure assessment, an estimate of the residue level in each food or food-form (e.g., orange or orange juice) on the food commodity residue list is multiplied by the average daily consumption estimate for that food/food form to produce a residue intake estimate. The resulting residue intake estimate for each food/food form is summed with the residue intake estimates for all other food/food forms on the commodity residue list to arrive at the total average estimated exposure. Exposure is expressed in mg/kg body weight/day and as a percent of the cPAD. This procedure is performed for each population subgroup.

For an acute exposure assessment, individual one-day food consumption data are used on an individual-by-individual basis. The reported consumption amounts of each food item can be multiplied by a residue point estimate and summed to obtain a total daily pesticide exposure for a deterministic exposure assessment, or “matched” in multiple random pairings with residue values and then summed in a probabilistic assessment. The resulting distribution of exposures is expressed as a percentage of the aPAD on both a user (i.e., only those who reported eating relevant commodities/food forms) and a per-capita (i.e., those who reported eating the relevant commodities as well as those who did not) basis. In accordance with HED policy, per capita exposure and risk are reported for analyses performed at all levels of refinement. However, for deterministic assessments, any significant differences in user vs. per capita exposure and risk are specifically identified and noted in the risk assessment.

## VI. Toxicological Information

Table 2 summarizes the revised toxicological information provided for the prothioconazole risk assessment of 01/05/2009 (D347123, B. O’Keefe *et al.*).

The prothioconazole risk assessment team previously recommended that the FQPA Safety Factor be reduced from 10X to 1X (D347123, 01/05/2009, B. O’Keefe *et al.*). Because of incomplete data reporting, there were uncertainties regarding dose levels at which neurotoxicities (brain morphometrics and peripheral nerve degeneration) were occurring in the pups of rats. Because of this database uncertainty, the FQPA safety factor was retained at 10X in previous hazard characterizations. However, the additional data [MRID 47293901] were submitted, and evaluation of the complete data resulted in a reduction of the FQPA safety factor to 1X.

<b>Table 2. Summary of Toxicological Doses and Endpoints for Prothioconazole for Use in Dietary Risk Assessments</b>				
Exposure/ Scenario	Point of Departure	Uncertainty/FQPA Safety Factors	RfD, PAD, Level of Concern for Risk Assessment	Study and Toxicological Effects
Acute Dietary (Females 13 – 49)	NOAEL = 2.0 mg/kg/day	UF <sub>A</sub> =10x UF <sub>H</sub> =10x FQPA SF=1x	Acute RfD = 0.02 mg/kg/day  aPAD = 0.02 mg/kg/day	Developmental Toxicity study in rabbits LOAEL = 10 mg/kg/day, based on structural alterations including malformed vertebral body and ribs, arthrogryposis, and multiple malformations.
Acute Dietary (General Population, including infants and	None	None	None	An appropriate study was not identified
Chronic Dietary (All Populations)	NOAEL=1.1 mg/kg/day	UF <sub>A</sub> =10x UF <sub>H</sub> =10x	Chronic RfD = 0.01 mg/kg/day	Chronic/Oncogenicity study in rats

<b>Table 2. Summary of Toxicological Doses and Endpoints for Prothioconazole for Use in Dietary Risk Assessments</b>				
		FQPA SF=1x	cPAD = 0.01 mg/kg/day	LOAEL = 8.0 mg/kg/day based on liver histopathology (hepatocellular vacuolation and fatty change (single cell, centrilobular, and periportal)).
Cancer (oral, dermal, inhalation)	Classification: “not likely to be carcinogenic to humans” based on the absence of significant tumor increases in two adequate rodent carcinogenicity studies.			

NOAEL = no observed adverse effect level. LOAEL = lowest observed adverse effect level. UF = uncertainty factor. UF<sub>A</sub> = extrapolation from animal to human (intraspecies). UF<sub>H</sub> = potential variation in sensitivity among members of the human population (interspecies). FQPA SF = FQPA Safety Factor. PAD = population adjusted dose (a = acute, c = chronic). RfD = reference dose.

## VII. Results/Discussion

Partially refined acute and chronic dietary exposure assessments were conducted for prothioconazole. HED-recommended tolerance values were used for pea & bean, dried shelled, except soybean (subgroup 6C, 1.0 ppm), soybean seed (0.2 ppm) sugar beet roots (0.3 ppm), and bushberry (1.5 ppm). Existing tolerances on sunflower, berries, cucurbit vegetables, sweet corn, kernel plus cob with husks removed (K + CWHR), and cottonseed were utilized; average field trial residues (all other food forms were blended), empirical processing factors, and 100% CT were assumed for the acute and chronic dietary assessments. Dietary risk estimates were determined considering exposures from food plus water using upper bound drinking water exposures from groundwater EDWCs for the acute and chronic assessments.

Since no acute endpoint was identified for the general U.S. population; females 13-49 years of age was the only population subgroup included in the acute assessment. The dietary exposure analyses result in acute dietary risk estimates that are below the HED's level of concern for food and drinking water. The acute exposure for food and drinking water estimates was 0.008135 kg/day, which utilized 41% of the aPAD for females 13-49 years old at the 95<sup>th</sup> percentile.

The dietary exposure analyses result in chronic dietary risk estimates that are below the HED's level of concern. The exposure for food plus upper bound drinking water estimates was 0.003362 mg/kg/day, which utilized 34% of the cPAD for the General U.S. Population. The highest exposure and risk estimates for food plus drinking water were for all infants (< 1 year old) population subgroup at 0.007981 mg/kg/day which utilized 80% of the cPAD.

<b>Table 3. Summary of Dietary (Food and Drinking Water) Exposure and Risk for Prothioconazole</b>				
<b>Population Subgroup</b>	<b>Acute Dietary (95th Percentile)</b>		<b>Chronic Dietary</b>	
	<b>Dietary Exposure (mg/kg/day)</b>	<b>% aPAD*</b>	<b>Dietary Exposure (mg/kg/day)</b>	<b>% cPAD*</b>
General U.S. Population	NA	NA	0.003379	34
All Infants (<1 year old)			<b>0.008007</b>	<b>80</b>
Children 1-2 years old			0.006052	61
Children 3-5 years old			0.005011	50
Children 6-12 years old			0.003466	35
Youth 13-19 years old			0.002542	25
Adults 20-49 years old			0.003223	32

<b>Table 3. Summary of Dietary (Food and Drinking Water) Exposure and Risk for Prothioconazole</b>				
<b>Population Subgroup</b>	<b>Acute Dietary (95th Percentile)</b>		<b>Chronic Dietary</b>	
	<b>Dietary Exposure (mg/kg/day)</b>	<b>% aPAD*</b>	<b>Dietary Exposure (mg/kg/day)</b>	<b>% cPAD*</b>
Adults 50-99 years old			0.003155	32
Females 13-49 years old	<b>0.008135</b>	<b>41</b>	0.003202	32

\*The subpopulations with the highest risk estimate are highlighted in bold print.

## VIII. Characterization of Inputs/Outputs

Most residue estimates used in the assessment are derived mostly from tolerance-level of the prothioconazole and it was assumed that 100% of foods with a tolerance have residues of the triazole metabolites (100% CT). Overall, this assessment is considered to be conservative and likely overestimates actual direct and indirect dietary exposure to the triazole metabolites. Regulatory recommendations at the 95<sup>th</sup> percentile are appropriate. Although not needed at this time, the analyses could be further refined through the use of average residues based on field trial data, percent crop treated data, PDP data, and/or preparation/cooking factors. Since risk estimates are below HED's level of concern, a more highly refined analysis is not needed at this time.

## IX. Conclusions

Acute and chronic dietary risk assessments were conducted for prothioconazole. The dietary exposure analyses result in acute and chronic dietary risk estimates that are below the HED's level of concern. HED is confident that the assessment does not underestimate risk to the general U.S. population or any population subgroup.

## X. List of Attachments

1. Revised Summary of Data and Residue Estimates Used in the Dietary Analyses.
2. Acute Food+Water Input File.
3. Chronic Food+Water Input File.
4. Acute Food + Water Results File.
5. Chronic Food + Water Results File.



**Attachment 1. Data and Residue Estimates Used in the Dietary Exposure Analyses**

Summary of Data and Residue Estimates Used in the Dietary Analyses <sup>1</sup>							
RAC	Food Forms	Classification <sup>2</sup>	Data Source <sup>3</sup>	No. of Samples; Average Residues (ppm)	LOQ (ppm)	PFs	Acute and Chronic Anticipated Residue Estimates (ppm) <sup>4</sup>
<b>Crop Group 1: Root and Tuber Vegetables</b>							
Beet, sugar	All	B	FT, 4953303	4; 0.3	0.02	None	0.3 <sup>5</sup>
Beet, sugar, molasses	All	B	FT, 46974608	24; 0.07	0.05	0 1	0.3 <sup>5</sup>
Potato	All	B	FT, 48024903-04 MS, 48024902	8; 0.02	0.02	6.5 (for dry only)	0.02
<b>Crop Group 6: Legume Vegetables</b>							
Bean, dried, shelled	All	B	FT, 46246200	20; 0.062	0.01	None	1.0 <sup>5</sup>
Pea, dry, shelled	All	B	FT, 46246221	26; 0.156	0.05	None	1.0 <sup>5</sup>
Soybean, seed	All	B	FT, 46841001	42; 0.05	0.05	None	0.2 <sup>5</sup>
Soybean, flour	All	B	FT, 46841001	42; 0.05	0.05	2 2	0.2 <sup>5</sup>
Soybean, soy milk	All	B	FT, 46841001	42; 0.05	0.05	None	0.2 <sup>5</sup>
Soybean, oil	All	B	FT, 46841001	42; 0.05	0.05	0 2	0.2 <sup>5</sup>
<b>Crop Group 9: Cucurbit Vegetables</b>							
Muskmelon	All	NB	FT, 48803306	8; 0.10	0.02	None	0.30 <sup>5</sup>
Cucumber	All	NB	FT, 48803306	8; 0.06	0.02	None	0.30 <sup>5</sup>
Summer squash	All	NB	FT, 48803306	8; 0.05	0.02	None	0.30 <sup>5</sup>
<b>Subgroup 13-07B: Bushberry</b>							
Blueberry	All	PB	FT, 48803301	11; 0.55	0.02	None	1.5 <sup>5</sup>
<b>Subgroup 13-07H: Low growing Berry except Strawberry</b>							
Cranberry	RAC	PB	FT, 48803302	6; 0.05	0.02	None	0.20 <sup>5</sup>
Cranberry, juice	All	PB	FT, 48803302	6; 0.05	0.02	1.2	0.20 <sup>5</sup>
Cranberry, dried	All	PB	FT, 48803302	6; 0.05	0.02	7 9	0.20 <sup>5</sup>
<b>Crop Group 15: Cereal Grains</b>							
Barley	All	B	FT, 46246200	49; 0.040	0.02	None	0.04
Buckwheat	All	B	FT, 47521901	40; 0.040	0.04	None	0.04
Corn	All	B	FT, 47521901	40; 0.040	0.04	None	0.04
Corn, oil	All	B	FT, 47521903	40; 0.040	0.04	0 2	0.04
Corn, meal	All	B	FT, 47521903	40; 0.040	0.04	0.46	0.04
Corn, bran	All	B	FT, 47521903	40; 0.040	0.04	1 3	0.04
Corn, flour	All	B	FT, 47521903	40; 0.040	0.04	0.57	0.04
Corn, starch	All	B	FT, 47521903	40; 0.040	0.04	0 2	0.04
Corn, syrup	All	B	FT, 47521903	40; 0.040	0.04	None	0.04
Millet	All	B	FT, 47521901	40; 0.040	0.04	None	0.04
Oat	All	B	FT, 46246219	66; 0.014	0.02	None	0.04
Pop corn	All	B	FT, 47521901	6; 0.040	0.04	None	0.04
Sweet corn (K+CWHR)	All	NB	FT, 47521901	24; 0.040	0.04	None	0.04
Rice, grain	All	B	FT, 46246216	32; 0.031	0.02	None	0.031
Rice, polished	All	B	FT, 46246216	32; 0.031	0.02	1	0.031
Rice, bran	All	B	FT, 46246216	32; 0.031	0.02	1	0.031
Rice flour	All	B	FT, 46246216	32; 0.031	0.02	1.25	0.031
Wild rice, grain	All	B	FT, 46246216	32; 0.031	0.02	None	0.031
Rye	All	B	FT, 46246219	66; 0.014	0.02	None	0.014
Wheat, grain	All	B	FT, 46246219	66; 0.014	0.02	None	0.014
Wheat, flour	All	B	FT, 46246219	66; 0.014	0.02	0.4	0.014
Wheat, germ	All	B	FT, 46246219	66; 0.014	0.02	2.0	0.014
Wheat, bran	All	B	FT, 46246219	66; 0.014	0.02	2.4	0.014
<b>Crop Group 18: Nongrass Animal Feeds</b>							
Alfalfa, seed	All	B	MS, 48024901	1; 0.005	0.02	None	0.005
<b>Crop Group 20: Oilseeds</b>							
Rapeseed, oil	All	B	FT, 46246215	44; 0.015	0.020	0.7	0.015

Summary of Data and Residue Estimates Used in the Dietary Analyses <sup>1</sup>							
RAC	Food Forms	Classification <sup>2</sup>	Data Source <sup>3</sup>	No. of Samples; Average Residues (ppm)	LOQ (ppm)	PFs	Acute and Chronic Anticipated Residue Estimates (ppm) <sup>4</sup>
<b>Crop Group 20B: Sunflower</b>							
Sunflower, seed	All	B	FT, 49882601	5; 0.2	0.2	None	0.2 <sup>5</sup>
Sunflower, oil	All	B	FT, 49882601	5; 0.2	0.2	None	0.2 <sup>5</sup>
Sunflower, oil-babyfood	All	B	FT, 49882601	5; 0.2	0.2	None	0.2 <sup>5</sup>
<b>Crop Group 20C: Cottonseeds</b>							
Cottonseed, oil	All	B	FT, 49533302	12; 0.4	0.04	None	0.4 <sup>5</sup>
Cottonseed, oil-babyfood	All	B	FT, 49533302	12; 0.4	0.04	None	0.4 <sup>5</sup>
<b>Miscellaneous Commodities</b>							
Peanut	All	B	FT, 46246217	24; 0.01	0.02	None	0.02
Peanut, butter	All	B	FT, 46246217	24; 0.01	0.02	1.2	0.02
<b>Meat</b>							
Beef, meat	All except dried beef	--	Ruminant feeding study	3; 0.03	0.03	None	0.017
	Dried beef	--	Ruminant feeding study	3; 0.01	0.01	1.92	0.017
Beef, meat byproducts	All	--	Ruminant feeding study	3; 0.104	0.01	None	0.18
Beef, fat	All	--	Ruminant feeding study	3; 0.005	0.01	None	0.086
Beef, kidney	All	--	Ruminant feeding study	3; 0.083	0.01	None	0.14
Beef, liver	All	--	Ruminant feeding study	3; 0.104	0.01	None	0.18
Goat, meat	All	--	Ruminant feeding study	3; 0.01	0.01	None	0.017
Goat, meat byproducts	All	--	Ruminant feeding study	3; 0.104	0.01	None	0.18
Goat, fat	All	--	Ruminant feeding study	3; 0.005	0.01	None	0.086
Goat, kidney	All	--	Ruminant feeding study	3; 0.083	0.01	None	0.14
Goat, liver	All	--	Ruminant feeding study	3; 0.104	0.01	None	0.18
Horse, meat	All	--	Ruminant feeding study	3; 0.01	0.01	None	0.17
Pork, meat byproducts	All	--	Ruminant feeding study	3; 0.104	0.01	None	0.0052
Pork, kidney	All	--	Ruminant feeding study	3; 0.083	0.01	None	0.0036
Pork, liver	All	--	Ruminant feeding study	3; 0.104	0.01	None	0.0052
Sheep, meat	All	--	Ruminant feeding study	3; 0.01	0.01	None	0.017
Sheep, meat byproducts	All	--	Ruminant feeding study	3; 0.01	0.01	None	0.18
Sheep, fat	All	--	Ruminant feeding study	3; 0.005	0.01	None	0.086
Sheep, kidney	All	--	Ruminant feeding study	3; 0.083	0.01	None	0.14
Sheep, liver	All	--	Ruminant feeding study	3; 0.104	0.01	None	0.18
<b>Dairy Products</b>							
Milk	All	--	Ruminant feeding study	3; 0.015	0.015	None	0.0086
Milk, fat	All	--	Ruminant feeding study	3; 0.015	0.015	20	0.0086

<sup>1</sup> Revised to include the maximum residues in meat and milk based on recalculated dietary burden.

<sup>2</sup> Classification of blended (B), partially blended (PB) or not blended (NB).

<sup>3</sup> FT = field trial data; MRIDs are listed for crop field trial studies. MS = metabolism study.

<sup>4</sup> Acute and Chronic ARs are equivalent. Since all of the food forms included are blended commodities, except sweet corn, average residues were used for both assessments. For sweet corn (K+CWHR), all residues were <LOQ. LOQ was used as the average value.

<sup>5</sup> HED recommended tolerance was used for both the acute and chronic assessments.

**Attachment 2. Acute Food + Water Input File**

Filename: E:\\$ Work Files\\$

Prothioconazole\DRA\Deem\WDW\_Prothioconazole\_acute\_04\_16\_2020.R08

Chemical: Prothioconazole

RfD(Chronic): .01 mg/kg bw/day NOEL(Chronic): 1.1 mg/kg bw/day

RfD(Acute): .02 mg/kg bw/day NOEL(Acute): 2 mg/kg bw/day

Date created/last modified: 05-01-2020/15:23:11

Program ver. 3.16, 03-08-d

EPA Code	Crop Grp	Commodity Name	Def Res (ppm)	Adj.Factors #1	#2	Comment
0101052000	1A	Beet, sugar	0.300000	1.000	1.000	
0101052001	1A	Beet, sugar-babyfood	0.300000	1.000	1.000	
0101053000	1A	Beet, sugar, molasses	0.300000	0.100	1.000	
0101053001	1A	Beet, sugar, molasses-babyfood	0.300000	0.100	1.000	
0103296000	1C	Potato, chips	0.020000	1.000	1.000	
0103297000	1C	Potato, dry (granules/ flakes)	0.020000	6.500	1.000	
0103297001	1C	Potato, dry (granules/ flakes)-b	0.020000	6.500	1.000	
0103298000	1C	Potato, flour	0.020000	1.000	1.000	
0103298001	1C	Potato, flour-babyfood	0.020000	1.000	1.000	
0103299000	1C	Potato, tuber, w/peel	0.020000	1.000	1.000	
0103299001	1C	Potato, tuber, w/peel-babyfood	0.020000	1.000	1.000	
0103300000	1C	Potato, tuber, w/o peel	0.020000	1.000	1.000	
0103300001	1C	Potato, tuber, w/o peel-babyfood	0.020000	1.000	1.000	
0600347000	6	Soybean, seed	0.200000	1.000	1.000	
0600349000	6	Soybean, soy milk	0.200000	1.000	1.000	
0600349001	6	Soybean, soy milk-babyfood or in	0.200000	1.000	1.000	
0600350000	6	Soybean, oil	0.200000	0.200	1.000	
0600350001	6	Soybean, oil-babyfood	0.200000	0.200	1.000	
0603030000	6C	Bean, black, seed	1.000000	1.000	1.000	
0603032000	6C	Bean, broad, seed	1.000000	1.000	1.000	
0603034000	6C	Bean, cowpea, seed	1.000000	1.000	1.000	
0603035000	6C	Bean, great northern, seed	1.000000	1.000	1.000	
0603036000	6C	Bean, kidney, seed	1.000000	1.000	1.000	
0603038000	6C	Bean, lima, seed	1.000000	1.000	1.000	
0603039000	6C	Bean, mung, seed	1.000000	1.000	1.000	
0603040000	6C	Bean, navy, seed	1.000000	1.000	1.000	
0603041000	6C	Bean, pink, seed	1.000000	1.000	1.000	
0603042000	6C	Bean, pinto, seed	1.000000	1.000	1.000	
0603098000	6C	Chickpea, seed	1.000000	1.000	1.000	
0603098001	6C	Chickpea, seed-babyfood	1.000000	1.000	1.000	
0603099000	6C	Chickpea, flour	1.000000	1.000	1.000	
0603182000	6C	Guar, seed	1.000000	1.000	1.000	
0603182001	6C	Guar, seed-babyfood	1.000000	1.000	1.000	
0603203000	6C	Lentil, seed	1.000000	1.000	1.000	
0603256000	6C	Pea, dry	1.000000	1.000	1.000	
0603256001	6C	Pea, dry-babyfood	1.000000	1.000	1.000	
0603258000	6C	Pea, pigeon, seed	1.000000	1.000	1.000	
0603348000	6C	Soybean, flour	0.200000	2.200	1.000	
0603348001	6C	Soybean, flour-babyfood	0.200000	2.200	1.000	
0901075000	9A	Cantaloupe	0.300000	1.000	1.000	
0901187000	9A	Honeydew melon	0.300000	1.000	1.000	
0901399000	9A	Watermelon	0.300000	1.000	1.000	
0901400000	9A	Watermelon, juice	0.300000	1.000	1.000	
0902021000	9B	Balsam pear	0.300000	1.000	1.000	
0902088000	9B	Chayote, fruit	0.300000	1.000	1.000	
0902102000	9B	Chinese waxgourd	0.300000	1.000	1.000	
0902135000	9B	Cucumber	0.300000	1.000	1.000	
0902308000	9B	Pumpkin	0.300000	1.000	1.000	
0902309000	9B	Pumpkin, seed	0.300000	1.000	1.000	
0902356000	9B	Squash, summer	0.300000	1.000	1.000	
0902356001	9B	Squash, summer-babyfood	0.300000	1.000	1.000	

0902357000	9B	Squash, winter	0.300000	1.000	1.000
0902357001	9B	Squash, winter-babyfood	0.300000	1.000	1.000
1302057000	13B	Blueberry	2.000000	1.000	1.000
1302057001	13B	Blueberry-babyfood	2.000000	1.000	1.000
1302136000	13B	Currant	2.000000	1.000	1.000
1302137000	13B	Currant, dried	2.000000	1.000	1.000
1302149000	13B	Elderberry	2.000000	1.000	1.000
1302174000	13B	Gooseberry	2.000000	1.000	1.000
1302191000	13B	Huckleberry	2.000000	1.000	1.000
1307130000	13G	Cranberry	0.200000	1.000	1.000
1307130001	13G	Cranberry-babyfood	0.200000	1.000	1.000
1307131000	13G	Cranberry, dried	0.200000	7.900	1.000
1307132000	13G	Cranberry, juice	0.200000	1.200	1.000
1307132001	13G	Cranberry, juice-babyfood	0.200000	1.200	1.000
1500025000	15	Barley, pearled barley	0.040000	1.000	1.000
1500025001	15	Barley, pearled barley-babyfood	0.040000	1.000	1.000
1500026000	15	Barley, flour	0.040000	1.000	1.000
1500026001	15	Barley, flour-babyfood	0.040000	1.000	1.000
1500027000	15	Barley, bran	0.040000	1.000	1.000
1500065000	15	Buckwheat	0.040000	1.000	1.000
1500066000	15	Buckwheat, flour	0.040000	1.000	1.000
1500120000	15	Corn, field, flour	0.040000	0.570	1.000
1500120001	15	Corn, field, flour-babyfood	0.040000	0.570	1.000
1500121000	15	Corn, field, meal	0.040000	0.460	1.000
1500121001	15	Corn, field, meal-babyfood	0.040000	0.460	1.000
1500122000	15	Corn, field, bran	0.040000	1.300	1.000
1500123000	15	Corn, field, starch	0.040000	0.200	1.000
1500123001	15	Corn, field, starch-babyfood	0.040000	0.200	1.000
1500124000	15	Corn, field, syrup	0.040000	1.500	1.000
1500124001	15	Corn, field, syrup-babyfood	0.040000	1.500	1.000
1500125000	15	Corn, field, oil	0.040000	0.200	1.000
1500125001	15	Corn, field, oil-babyfood	0.040000	0.200	1.000
1500126000	15	Corn, pop	0.040000	1.000	1.000
1500127000	15	Corn, sweet	0.040000	1.000	1.000
1500127001	15	Corn, sweet-babyfood	0.040000	1.000	1.000
1500226000	15	Millet, grain	0.040000	1.000	1.000
1500231000	15	Oat, bran	0.014000	1.000	1.000
1500232000	15	Oat, flour	0.014000	1.000	1.000
1500232001	15	Oat, flour-babyfood	0.014000	1.000	1.000
1500233000	15	Oat, groats/rolled oats	0.014000	1.000	1.000
1500233001	15	Oat, groats/rolled oats-babyfood	0.014000	1.000	1.000
1500323000	15	Rice, white	0.031000	0.100	1.000
1500323001	15	Rice, white-babyfood	0.031000	0.100	1.000
1500324000	15	Rice, brown	0.031000	1.000	1.000
1500324001	15	Rice, brown-babyfood	0.031000	1.000	1.000
1500325000	15	Rice, flour	0.031000	1.250	1.000
1500325001	15	Rice, flour-babyfood	0.031000	1.250	1.000
1500326000	15	Rice, bran	0.031000	1.000	1.000
1500326001	15	Rice, bran-babyfood	0.031000	1.000	1.000
1500328000	15	Rye, grain	0.014000	1.000	1.000
1500329000	15	Rye, flour	0.014000	1.000	1.000
1500381000	15	Triticale, flour	0.014000	0.400	1.000
1500381001	15	Triticale, flour-babyfood	0.014000	0.400	1.000
1500401000	15	Wheat, grain	0.014000	1.000	1.000
1500401001	15	Wheat, grain-babyfood	0.014000	1.000	1.000
1500402000	15	Wheat, flour	0.014000	0.400	1.000
1500402001	15	Wheat, flour-babyfood	0.014000	0.400	1.000
1500403000	15	Wheat, germ	0.014000	2.000	1.000
1500404000	15	Wheat, bran	0.014000	2.400	1.000
1800002000	18	Alfalfa, seed	0.005000	1.000	1.000
2001319000	20A	Rapeseed, oil	0.015000	0.700	1.000
2001319001	20A	Rapeseed, oil-babyfood	0.015000	0.700	1.000
2002364000	20B	Sunflower, seed	0.200000	1.000	1.000

2002365000	20B	Sunflower, oil	0.200000	1.000	1.000
2002365001	20B	Sunflower, oil-babyfood	0.200000	1.000	1.000
2003128000	20C	Cottonseed, oil	0.400000	2.900	1.000
2003128001	20C	Cottonseed, oil-babyfood	0.400000	2.900	1.000
3100044000	31	Beef, meat	0.017000	1.000	1.000
3100044001	31	Beef, meat-babyfood	0.017000	1.000	1.000
3100045000	31	Beef, meat, dried	0.017000	1.920	1.000
3100046000	31	Beef, meat byproducts	0.180000	1.000	1.000
3100046001	31	Beef, meat byproducts-babyfood	0.180000	1.000	1.000
3100047000	31	Beef, fat	0.086000	1.000	1.000
3100047001	31	Beef, fat-babyfood	0.086000	1.000	1.000
3100048000	31	Beef, kidney	0.140000	1.000	1.000
3100049000	31	Beef, liver	0.180000	1.000	1.000
3100049001	31	Beef, liver-babyfood	0.180000	1.000	1.000
3200169000	32	Goat, meat	0.017000	1.000	1.000
3200170000	32	Goat, meat byproducts	0.180000	1.000	1.000
3200171000	32	Goat, fat	0.086000	1.000	1.000
3200172000	32	Goat, kidney	0.140000	1.000	1.000
3200173000	32	Goat, liver	0.180000	1.000	1.000
3300189000	33	Horse, meat	0.017000	1.000	1.000
3400292000	34	Pork, meat byproducts	0.005200	1.000	1.000
3400292001	34	Pork, meat byproducts-babyfood	0.005200	1.000	1.000
3400294000	34	Pork, kidney	0.003600	1.000	1.000
3400295000	34	Pork, liver	0.005200	1.000	1.000
3500339000	35	Sheep, meat	0.017000	1.000	1.000
3500339001	35	Sheep, meat-babyfood	0.017000	1.000	1.000
3500340000	35	Sheep, meat byproducts	0.180000	1.000	1.000
3500341000	35	Sheep, fat	0.086000	1.000	1.000
3500341001	35	Sheep, fat-babyfood	0.086000	1.000	1.000
3500342000	35	Sheep, kidney	0.140000	1.000	1.000
3500343000	35	Sheep, liver	0.180000	1.000	1.000
3600222000	36	Milk, fat	0.008600	20.000	1.000
3600222001	36	Milk, fat-baby food/infant formu	0.008600	20.000	1.000
3600223000	36	Milk, nonfat solids	0.008600	1.000	1.000
3600223001	36	Milk, nonfat solids-baby food/in	0.008600	1.000	1.000
3600224000	36	Milk, water	0.008600	1.000	1.000
3600224001	36	Milk, water-babyfood/infant form	0.008600	1.000	1.000
3600225001	36	Milk, sugar (lactose)-baby food/	0.008600	1.000	1.000
4000094000	40	Chicken, liver	0.020000	1.000	1.000
5000383000	50	Turkey, liver	0.020000	1.000	1.000
5000383001	50	Turkey, liver-babyfood	0.020000	1.000	1.000
6000303000	60	Poultry, other, meat byproducts	0.020000	1.000	1.000
8601000000	86A	Water, direct, all sources	0.132000	1.000	1.000
8602000000	86B	Water, indirect, all sources	0.132000	1.000	1.000
9500263000	O	Peanut	0.020000	1.000	1.000
9500264000	O	Peanut, butter	0.020000	1.200	1.000
9500265000	O	Peanut, oil	0.020000	1.000	1.000

**Attachment 3. Chronic Food + Water Input File**

Filename: E:\\$ Work Files\\$

Prothioconazole\DRA\Deem\WDW\_Prothioconazole\_chronic\_04\_16\_2020.R08

Chemical: Prothioconazole

RfD(Chronic): .01 mg/kg bw/day NOEL(Chronic): 1.1 mg/kg bw/day

RfD(Acute): .02 mg/kg bw/day NOEL(Acute): 2 mg/kg bw/day

Date created/last modified: 04-16-2020/12:04:15

Program ver. 3.16, 03-08-d

EPA Code	Crop Grp	Commodity Name	Def Res (ppm)	Adj. Factors #1	#2	Comment
0101052000	1A	Beet, sugar	0.300000	1.000	1.000	
0101052001	1A	Beet, sugar-babyfood	0.300000	1.000	1.000	
0101053000	1A	Beet, sugar, molasses	0.300000	0.100	1.000	
0101053001	1A	Beet, sugar, molasses-babyfood	0.300000	0.100	1.000	
0103296000	1C	Potato, chips	0.020000	1.000	1.000	
0103297000	1C	Potato, dry (granules/ flakes)	0.020000	6.500	1.000	
0103297001	1C	Potato, dry (granules/ flakes)-b	0.020000	6.500	1.000	
0103298000	1C	Potato, flour	0.020000	1.000	1.000	
0103298001	1C	Potato, flour-babyfood	0.020000	1.000	1.000	
0103299000	1C	Potato, tuber, w/peel	0.020000	1.000	1.000	
0103299001	1C	Potato, tuber, w/peel-babyfood	0.020000	1.000	1.000	
0103300000	1C	Potato, tuber, w/o peel	0.020000	1.000	1.000	
0103300001	1C	Potato, tuber, w/o peel-babyfood	0.020000	1.000	1.000	
0600347000	6	Soybean, seed	0.200000	1.000	1.000	
0600349000	6	Soybean, soy milk	0.200000	1.000	1.000	
0600349001	6	Soybean, soy milk-babyfood or in	0.200000	1.000	1.000	
0600350000	6	Soybean, oil	0.200000	0.200	1.000	
0600350001	6	Soybean, oil-babyfood	0.200000	0.200	1.000	
0603030000	6C	Bean, black, seed	1.000000	1.000	1.000	
0603032000	6C	Bean, broad, seed	1.000000	1.000	1.000	
0603034000	6C	Bean, cowpea, seed	1.000000	1.000	1.000	
0603035000	6C	Bean, great northern, seed	1.000000	1.000	1.000	
0603036000	6C	Bean, kidney, seed	1.000000	1.000	1.000	
0603038000	6C	Bean, lima, seed	1.000000	1.000	1.000	
0603039000	6C	Bean, mung, seed	1.000000	1.000	1.000	
0603040000	6C	Bean, navy, seed	1.000000	1.000	1.000	
0603041000	6C	Bean, pink, seed	1.000000	1.000	1.000	
0603042000	6C	Bean, pinto, seed	1.000000	1.000	1.000	
0603098000	6C	Chickpea, seed	1.000000	1.000	1.000	
0603098001	6C	Chickpea, seed-babyfood	1.000000	1.000	1.000	
0603099000	6C	Chickpea, flour	1.000000	1.000	1.000	
0603182000	6C	Guar, seed	1.000000	1.000	1.000	
0603182001	6C	Guar, seed-babyfood	1.000000	1.000	1.000	
0603203000	6C	Lentil, seed	1.000000	1.000	1.000	
0603256000	6C	Pea, dry	1.000000	1.000	1.000	
0603256001	6C	Pea, dry-babyfood	1.000000	1.000	1.000	
0603258000	6C	Pea, pigeon, seed	1.000000	1.000	1.000	
0603348000	6C	Soybean, flour	0.200000	2.200	1.000	
0603348001	6C	Soybean, flour-babyfood	0.200000	2.200	1.000	
0901075000	9A	Cantaloupe	0.300000	1.000	1.000	
0901187000	9A	Honeydew melon	0.300000	1.000	1.000	
0901399000	9A	Watermelon	0.300000	1.000	1.000	
0901400000	9A	Watermelon, juice	0.300000	1.000	1.000	
0902021000	9B	Balsam pear	0.300000	1.000	1.000	
0902088000	9B	Chayote, fruit	0.300000	1.000	1.000	
0902102000	9B	Chinese waxgourd	0.300000	1.000	1.000	
0902135000	9B	Cucumber	0.300000	1.000	1.000	
0902308000	9B	Pumpkin	0.300000	1.000	1.000	
0902309000	9B	Pumpkin, seed	0.300000	1.000	1.000	
0902356000	9B	Squash, summer	0.300000	1.000	1.000	
0902356001	9B	Squash, summer-babyfood	0.300000	1.000	1.000	

0902357000	9B	Squash, winter	0.300000	1.000	1.000
0902357001	9B	Squash, winter-babyfood	0.300000	1.000	1.000
1302057000	13B	Blueberry	2.000000	1.000	1.000
1302057001	13B	Blueberry-babyfood	2.000000	1.000	1.000
1302136000	13B	Currant	2.000000	1.000	1.000
1302137000	13B	Currant, dried	2.000000	1.000	1.000
1302149000	13B	Elderberry	2.000000	1.000	1.000
1302174000	13B	Gooseberry	2.000000	1.000	1.000
1302191000	13B	Huckleberry	2.000000	1.000	1.000
1307130000	13G	Cranberry	0.200000	1.000	1.000
1307130001	13G	Cranberry-babyfood	0.200000	1.000	1.000
1307131000	13G	Cranberry, dried	0.200000	7.900	1.000
1307132000	13G	Cranberry, juice	0.200000	1.200	1.000
1307132001	13G	Cranberry, juice-babyfood	0.200000	1.200	1.000
1500025000	15	Barley, pearled barley	0.040000	1.000	1.000
1500025001	15	Barley, pearled barley-babyfood	0.040000	1.000	1.000
1500026000	15	Barley, flour	0.040000	1.000	1.000
1500026001	15	Barley, flour-babyfood	0.040000	1.000	1.000
1500027000	15	Barley, bran	0.040000	1.000	1.000
1500065000	15	Buckwheat	0.040000	1.000	1.000
1500066000	15	Buckwheat, flour	0.040000	1.000	1.000
1500120000	15	Corn, field, flour	0.040000	0.570	1.000
1500120001	15	Corn, field, flour-babyfood	0.040000	0.570	1.000
1500121000	15	Corn, field, meal	0.040000	0.460	1.000
1500121001	15	Corn, field, meal-babyfood	0.040000	0.460	1.000
1500122000	15	Corn, field, bran	0.040000	1.300	1.000
1500123000	15	Corn, field, starch	0.040000	0.200	1.000
1500123001	15	Corn, field, starch-babyfood	0.040000	0.200	1.000
1500124000	15	Corn, field, syrup	0.040000	1.500	1.000
1500124001	15	Corn, field, syrup-babyfood	0.040000	1.500	1.000
1500125000	15	Corn, field, oil	0.040000	0.200	1.000
1500125001	15	Corn, field, oil-babyfood	0.040000	0.200	1.000
1500126000	15	Corn, pop	0.040000	1.000	1.000
1500127000	15	Corn, sweet	0.040000	1.000	1.000
1500127001	15	Corn, sweet-babyfood	0.040000	1.000	1.000
1500226000	15	Millet, grain	0.040000	1.000	1.000
1500231000	15	Oat, bran	0.014000	1.000	1.000
1500232000	15	Oat, flour	0.014000	1.000	1.000
1500232001	15	Oat, flour-babyfood	0.014000	1.000	1.000
1500233000	15	Oat, groats/rolled oats	0.014000	1.000	1.000
1500233001	15	Oat, groats/rolled oats-babyfood	0.014000	1.000	1.000
1500323000	15	Rice, white	0.031000	0.100	1.000
1500323001	15	Rice, white-babyfood	0.031000	0.100	1.000
1500324000	15	Rice, brown	0.031000	1.000	1.000
1500324001	15	Rice, brown-babyfood	0.031000	1.000	1.000
1500325000	15	Rice, flour	0.031000	1.000	1.000
1500325001	15	Rice, flour-babyfood	0.031000	1.000	1.000
1500326000	15	Rice, bran	0.031000	0.600	1.000
1500326001	15	Rice, bran-babyfood	0.031000	0.600	1.000
1500328000	15	Rye, grain	0.014000	1.000	1.000
1500329000	15	Rye, flour	0.014000	1.000	1.000
1500381000	15	Triticale, flour	0.014000	0.400	1.000
1500381001	15	Triticale, flour-babyfood	0.014000	0.400	1.000
1500401000	15	Wheat, grain	0.014000	1.000	1.000
1500401001	15	Wheat, grain-babyfood	0.014000	1.000	1.000
1500402000	15	Wheat, flour	0.014000	0.400	1.000
1500402001	15	Wheat, flour-babyfood	0.014000	0.400	1.000
1500403000	15	Wheat, germ	0.014000	2.000	1.000
1500404000	15	Wheat, bran	0.014000	2.400	1.000
1800002000	18	Alfalfa, seed	0.005000	1.000	1.000
2001319000	20A	Rapeseed, oil	0.015000	0.700	1.000
2001319001	20A	Rapeseed, oil-babyfood	0.015000	0.700	1.000
2002364000	20B	Sunflower, seed	0.200000	1.000	1.000

2002365000	20B	Sunflower, oil	0.200000	1.200	1.000
2002365001	20B	Sunflower, oil-babyfood	0.200000	1.200	1.000
2003114001	20C	Coconut, oil-babyfood	0.400000	1.000	1.000
2003128000	20C	Cottonseed, oil	0.400000	2.900	1.000
2003128001	20C	Cottonseed, oil-babyfood	0.400000	2.900	1.000
3100044000	31	Beef, meat	0.017000	1.000	1.000
3100044001	31	Beef, meat-babyfood	0.017000	1.000	1.000
3100045000	31	Beef, meat, dried	0.017000	1.920	1.000
3100046000	31	Beef, meat byproducts	0.180000	1.000	1.000
3100046001	31	Beef, meat byproducts-babyfood	0.180000	1.000	1.000
3100047000	31	Beef, fat	0.086000	1.000	1.000
3100047001	31	Beef, fat-babyfood	0.086000	1.000	1.000
3100048000	31	Beef, kidney	0.140000	1.000	1.000
3100049000	31	Beef, liver	0.180000	1.000	1.000
3100049001	31	Beef, liver-babyfood	0.180000	1.000	1.000
3200169000	32	Goat, meat	0.017000	1.000	1.000
3200170000	32	Goat, meat byproducts	0.180000	1.000	1.000
3200171000	32	Goat, fat	0.086000	1.000	1.000
3200172000	32	Goat, kidney	0.140000	1.000	1.000
3200173000	32	Goat, liver	0.180000	1.000	1.000
3300189000	33	Horse, meat	0.017000	1.000	1.000
3400292000	34	Pork, meat byproducts	0.005200	1.000	1.000
3400292001	34	Pork, meat byproducts-babyfood	0.005200	1.000	1.000
3400294000	34	Pork, kidney	0.003600	1.000	1.000
3400295000	34	Pork, liver	0.005200	1.000	1.000
3500339000	35	Sheep, meat	0.017000	1.000	1.000
3500339001	35	Sheep, meat-babyfood	0.017000	1.000	1.000
3500340000	35	Sheep, meat byproducts	0.180000	1.000	1.000
3500341000	35	Sheep, fat	0.086000	1.000	1.000
3500341001	35	Sheep, fat-babyfood	0.086000	1.000	1.000
3500342000	35	Sheep, kidney	0.140000	1.000	1.000
3500343000	35	Sheep, liver	0.180000	1.000	1.000
3600222000	36	Milk, fat	0.008600	20.000	1.000
3600222001	36	Milk, fat-baby food/infant formu	0.008600	20.000	1.000
3600223000	36	Milk, nonfat solids	0.008600	1.000	1.000
3600223001	36	Milk, nonfat solids-baby food/in	0.008600	1.000	1.000
3600224000	36	Milk, water	0.008600	1.000	1.000
3600224001	36	Milk, water-babyfood/infant form	0.008600	1.000	1.000
3600225001	36	Milk, sugar (lactose)-baby food/	0.008600	1.000	1.000
4000094000	40	Chicken, liver	0.020000	1.000	1.000
4000095000	40	Chicken, meat byproducts	0.020000	1.000	1.000
4000095001	40	Chicken, meat byproducts-babyfoo	0.020000	1.000	1.000
5000383000	50	Turkey, liver	0.020000	1.000	1.000
5000383001	50	Turkey, liver-babyfood	0.020000	1.000	1.000
5000384000	50	Turkey, meat byproducts	0.020000	1.000	1.000
5000384001	50	Turkey, meat byproducts-babyfood	0.020000	1.000	1.000
6000302000	60	Poultry, other, liver	0.020000	1.000	1.000
6000303000	60	Poultry, other, meat byproducts	0.020000	1.000	1.000
8601000000	86A	Water, direct, all sources	0.128000	1.000	1.000
8602000000	86B	Water, indirect, all sources	0.128000	1.000	1.000
9500263000	O	Peanut	0.020000	1.000	1.000
9500264000	O	Peanut, butter	0.020000	1.200	1.000
9500265000	O	Peanut, oil	0.020000	1.000	1.000



**Attachment 4. Acute Food + Water Results**

US EPA  
DEEM-FCID ACUTE Analysis for PROTHIOCONAZOLE  
Residue file: WDW\_Prothioconazole\_acute\_04\_16\_2020.R08  
Adjustment factor #2 NOT used.  
Analysis Date: 05-13-2020/09:47:30      Residue file dated: 05-13-2020/09:45:00  
NOEL (Acute) = 2.000000 mg/kg body-wt/day  
RAC/FF intake summed over 24 hours  
Run Comment: ""  
=====

Summary calculations--per capita:

--- 95th Percentile---			--- 99th Percentile---			---99.9th Percentile---		
Exposure	% aRfD	MOE	Exposure	% aRfD	MOE	Exposure	% aRfD	MOE
-----								
Female 13-49:								
0.008135	40.67	245	0.011510	57.55	173	0.016449	82.25	121

**Attachment 5. Chronic Food + Water Results**

US EPA

Ver. 3.16, 03-08-d

DEEM-FCID Chronic analysis for PROTHIOCONAZOLE

NHANES 2003-2008 2-day

Residue file name: E:\\$ Work Files\\$

Prothioconazole\DRA\Deem\WDW\_Prothioconazole\_chronic\_04\_16\_2020.R08

Adjustment factor #2 NOT used.

Analysis Date 04-16-2020/12:06:14

Residue file dated: 04-16-2020/12:04:15

Reference dose (RfD, Chronic) = .01 mg/kg bw/day

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Total exposure by population subgroup

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Population Subgroup	Total Exposure	
	mg/kg body wt/day	Percent of Rfd
-----	-----	-----
Total US Population	0.003379	33.8%
Hispanic	0.003363	33.6%
Non-Hisp-White	0.003447	34.5%
Non-Hisp-Black	0.002789	27.9%
Non-Hisp-Other	0.003916	39.2%
Nursing Infants	0.002977	29.8%
Non-Nursing Infants	0.010253	102.5%
Female 13+ PREG	0.003157	31.6%
Children 1-6	0.005295	53.0%
Children 7-12	0.003287	32.9%
Male 13-19	0.002469	24.7%
Female 13-19/NP	0.002615	26.2%
Male 20+	0.003033	30.3%
Female 20+/NP	0.003342	33.4%
Seniors 55+	0.003099	31.0%
All Infants	0.008007	80.1%
Female 13-50	0.003203	32.0%
Children 1-2	0.006052	60.5%
Children 3-5	0.005011	50.1%
Children 6-12	0.003466	34.7%
Youth 13-19	0.002542	25.4%
Adults 20-49	0.003223	32.2%
Adults 50-99	0.003155	31.6%
Female 13-49	0.003202	32.0%
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